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ABSTRACT

This document, the first of a series, details some of the elements in Brigham Young University's Instructional Research and Development Program which reflect the belief that a training program for specialists in instructional development must contain a different emphasis than a research training program. The topics considered include 1) curriculum control which has eliminated peripheral areas of emphasis and made the master's and doctor's degrees in instructional psychology the primary emphasis of the graduate educational psychology program; 2) a five-phase internship moving the student through a series of experiences which require him to simulate the career involvement he will later experience; 3) a consortium within the university, consisting of the Department of Education, the Department of Psychology, and the Department of Instructional Research and Development; 4) a consortium external to the university of agencies involved in instructional development, providing a possible source of internship, and consisting of the Far West Laboratory for Educational Research and Development, Systems Development Corporation, McGraw Hill, and the local public schools; 5) the staffing pattern for Instructional Research and Development; and 6) a developed training package to be distributed to other agencies. (MBM)

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Instructional Research and Development At Brigham Young University: A Statement of Philosophy and Intent

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Instructional Research and Development at Brigham Young University
A statement of philosophy and intent

M. David Merrill Grant V. Harrison

Clark and Hopkins (1969) report that, based on currently funded federal programs alone (not including new demands by colleges, universities and industry), there is a need during the next five years for approximately five times as many development specialists as research specialists. Current educational programs are training only an estimated 5% of the required developmental specialists. This means that persons trained in instructional development are not available to staff current needs in federally funded projects (and even fewer available for other innovative institutions), and that this need will become more acute during the next five years. Current positions are frequently staffed with untrained public school people and the in-service training required to bring these people to a productive level is rarely adequate.

The need to improve instructional efficiency at the college level is constantly publicized by student demonstrations where the cry echoes nonrelevance, poor instruction, professors committed to publishing rather than instruction, and related complaints. While the amount of information available concerning creative use of instructional systems and media is not great, it far exceeds that which is being used in college courses. Many classes are still being taught to large numbers of students in a lecture format under the false assumption that such a procedure is more economical and efficient than is a systems approach to individualized instruction using carefully designed sequences supported by appropriate educational media.

Many colleges and universities, recognizing this gap, have established positions of director of media and instruction. The Clark and Hopkins (1969) study clearly indicates that many of these positions will be staffed by persons not trained to administer or direct the development of instructional systems. Hence, in spite of the new positions, the quality of instructional improvement is likely to be slow until more institutions provide training in instructional development.

It has too frequently been assumed that the procedures used to train educational researchers would produce personnel who could adequately participate in the development of the various components of an instructional system. More and more it is becoming apparent that the training of educational product developers requires a different approach from the training of researchers. Upon graduation, most educational researchers find the process of development very complex, requiring much expertise not acquired in their graduate training. Consequently, the number of trained personnel going into instructional development is low, causing an acute need for specialists in this area. The type of training program required to train specialists in instructional development must contain a different emphasis than a research training program. Especially important is the need for internship experiences which involve the student in a meaningful way in the

development process, in addition to classes legitimately oriented toward development. Our purpose is to structure a program which clearly recognizes this difference in emphasis.

The following paragraphs attempt to specify in more detail some of the elements of our program which reflect this difference in emphasis and which will, we believe, more adequately train specialists in instructional development.

1. Curriculum Control

It is a well-known fact that many training curricula are in reality collections of existing courses which were originally designed for a different purpose. The result of such a program is often not as satisfactory as would be possible if the curriculum were more adequately designed. In the BYU program we have attempted to overcome this weakness to some extent by the following mechanisms: first, a through examination of our graduate educational psychology offerings led us to believe that our strongest program was in the area of instructional development. We have therefore eliminated other areas of emphasis so that the Master's and Doctorate in Instructional Psychology represents the primary, and for the present the only, emphasis of our academic graduate educational psychology program. Second, the basic courses in the curriculum were redesigned to provide the student with a through grounding in applied instructional theory as it relates to the various components of an instructional system. Since the instructors of these courses are actively involved in the development of instructional materials themselves, there is a much better integration of theory and practice than is typically the case. Third, the curriculum is defined in terms of specified competencies rather than in terms of particular courses. Students are provided reading lists and suggestions for other structured learning activities which may also be used in acquiring the competencies. Rather than rely on the performance in a particular class, the students are periodically evaluated on their ability to demonstrate the specified competencies in applied development situations. This is achieved by means of a series of special projects that are correlated with the basic courses in the curriculum. The projects are sequential in terms of the specific competencies and expertise the student is expected to have at various points in his program. Fourth, the progression in the curriculum has been designed to train students first in development and then in research competence. The Master's curriculum is designed as a terminal degree so that students terminating at this point do have adequate skills to accept employment in regional labs, junior and community colleges, private business training, military training or public school development. Only after development skills are adequate does the student turn his attention to the development of instructional theory and empirical research on instructional variables related to instructional development. Again, because research and development associates on our faculty are actively involved in both development and research, this transition is much more integrated than is the case where different persons are directing the development and the research. Fifth, and certainly not least in importance, our program provides for a very close interaction between coursework and internship experience. This close interrelationship

is possible first because the Director of the Department of Instructional Research and Development and the Chairman of Educational Psychology Programs are the same person. Second, faculty members all have joint appointments in both areas, usually teaching one-third, directing development of materials to be used in university instruction one-third, and basic research on instructional variables one-third. Third, because the initial internship is "in house" and directed by the same faculty who are involved both in development and in teaching the courses in our program, a much closer integration of these two activities is possible than is usually the case. Our control over the internship allows for maximizing its relevance to the training goals of the program.*

2. Five Phase Internship

The internship has been divided into five phases designed to move the student through a series of experiences which will progressively require him to assume more responsibility and more closely simulate the type of career involvement he is likely to encounter following his graduation. The final phase of the internship attempts to involve the student in a "real world" employment opportunity where he can continue to apply the skills acquired during the first four phases.

Phase one: Structured Project. During his first semester in the program, the student is assigned to work closely with a full-time author-programer and/or an experienced intern under the supervision of an R&D associate.* In this relationship, he will be tutored in and allowed to practice specific development skills. This practice will be in preparing materials for part of an ongoing development project. The tutoring will be specific and in addition to his regular class work.

Phase two: Project Direction. As soon as he is judged to be able, the intern will assume major responsibility for a development project and in this role will assume responsibility to tutor newer interns in specific development skills. He will still be advised by an experienced author-programer and the project will be under the supervision of an R&D associate, but the primary responsibility for its development will rest with the intern at this stage. This will represent the final "in house" stage for terminal Master's graduates. From this stage they will go directly to an appropriate external internship as described in phase five.

Phase three: Research Intern. When a student continues in the program toward a Doctorate and after he has completed phase two, he is assigned to work with an advanced doctoral intern on an ongoing instructional research project. In this phase, he is tutored in specific research skills and given practice in these skills as part of the activities of carrying out the ongoing research. This activity is again supervised by an R&D associate.

Phase four: Research Project Director. As soon as he is able, the intern is encouraged in initiate a research project of his own design. In the process of executing this project, newer doctoral interns will be assigned to assist him and, in turn, receive tutoring in specific research skills. This phase is monitored

* For further details see staffing pattern described in section 5 below.

by an R&D associate who serves as the student's Doctoral committee chairman In most cases, the research conducted during this phase of the training will serve as the intern's dissertation.

Phase five: External Internship. When a student has completed the "in house" phases of the internship, phases one and two for a Master's student or phases one through four for a Doctoral student, he will be assisted to obtain employment as an advanced intern in some laboratory or development situation external to the program. An R&D associate will monitor this phase of the student's training to assist him and to provide feedback to the program as to how our internship and other training experiences can more adequately prepare future interns. (See section three of this document for descriptions of current external internship possibilities.) It is anticipated that some students will choose to complete their dissertation research in this context rather than "in house." Where the dissertation has been completed, students will be encouraged to consider this experience as post-Doctoral training.

3. Consorsium Within Brigham Young University

A degree in Instructional Psychology represents a joint offering of three departments. The coursework and academic credit are provided and the degree awarded by either the Department of Education in the College of Education, or by the Department of Psychology in the College of Social Sciences. The internship is provided by the Department of Instructional Research and Development in the Division of Communication Services. Since this department is not an academic department it cannot award degrees or offer classes. A joint committee, consisting of faculty from all three departments, serves as an administrative committee directing the degree program. The requirements are identical whether the degree is awarded in Psychology or in Education. Most of the faculty who are directly involved in instructional development have assignments in both IR&D and Education or in IR&D and Psychology. *

In some programs, an attempt is made to offer all of the coursework within a single department. Hence it is frequently the case that education departments offer statistics and computer science courses even though such departments exist independently. The BYU program attempts to offer supportive coursework where maximum strength exists. Hence statistics and research design courses are offered by the Department of Statistics, computer science courses are offered by the Department of Computer Science, philosophy of science is offered by the Philosophy Department, and basic psychology is offered in the Psychology Department. Each of these departments have agreed to assist in this program and have courses especially designed to provide skills that are appropriate for instructional psychology majors.

Communication services consists of five other departments in addition to Instructional Research and Development. These include: Broadcast Services, which consists of both ETV and ITV operations as well as a radio station; Motion Picture Studio, which is the major production agent for LDS church films and

* See section 5 for staffing assignment and pattern.

has production facilities that are without equal on any college campus; Photography, which consists of both commercial photography and experimental photography designed to support the instructional program; Electronic Media, which serves the entire campus in audio systems, video systems, information retreival, and many other types of electronic equipment, and consists of repair, production, and maintenance divisions; Educational Media, which consists of graphics production, filmstrip production, a major film library and equipment agency for the entire University, etc. The Division has more than 100 full-time employees and more than 200 additional part-time employees. It represents perhaps as complete a facility for the production, administration, and maintenance of instructional media as is available on any campus. IR&D as a department within this division has tremendous cooperation and access to any of these facilities for assistance in the production of instructional systems.

The purpose of the Department of Instructional Research and Development is to serve the entire instructional program of the University. In this role there is opportunity to work in almost every subject area and in a tremendous variety of instructional settings. Current projects (as of January, 1970) include programing undergraduate educational psychology for 600 students per semester, programed basic skills for nurses, a major project in history, in introductory physics, and introductory geology. Each of these courses reach from 700 to 1000 students per semester. Techniques being utilized include ITV, IRS, and Individualized Tape Slide Presentations, as well as booklets and other written materials. Additional projects are underway in basic communications and educational media.

4. Consorsium External to Brigham Young University

There are currently several formal and informal agreements with various agencies who are more or less involved with instructional development. IR&D is involved in development of materials or in testing materials for these agencies. These agencies also provide a possible source of internship for our students.

Current projects external to BYU include:

Far West Regional Laboratory. Minicourse evaluation. Conducting evaluation of a Minicourse on "Questionning" with graduate student instructors in courses involving many sections. Data to be collected spring 1970. Phil Langer, Far West Lab, is the project coordinator. This laboratory has agreed to provide graduate student support for purposes of evaluating their materials and has tentatively agreed to consider our students as interns.

Systems Development Corporation, Public Systems Division. Materials to train student tutors and other paraprofessionals. Grant Harrison, BYU, is the major consultant on this project. The possibility exists for us to provide student interns to this corporation for work on this and related projects.

McGraw Hill. Inservice training of teachers in instructional design. A tentative agreement exists to develop a series of presentations for training teachers in the principles of instructional design. David Engler, Vice President of Instructional Systems for McGraw Hill, is exploring this project.

Public Schools in Utah. Brigham Young University has excellent relationships with the local public schools and there are several projects in progress.

5. Staffing Pattern for Instructional Research and Development

Figure 1 illustrates the general organizational pattern for the department. Budget for the coming year (1970-71) has provision for three new full-time Ph. D. research/development associates. Since recruiting efforts are currently in progress (Dec, 1969), it is not possible to list these faculty members here. A number of candidates are being considered and it is anticipated that there will be no difficulty in filling these vacancies. At least one of the three positions will be filled with an experienced (three years or more) person. The current staff consists of the director and one full-time Ed. D. (Grant V. Harrison).

Figure 2 illustrates the team structure. Each R&D associate will have a three-way assignment. Approximately one-third time direction of development, one-third time research on instruction, and one-third time teaching will be the division. Figure 2 illustrates the dual research-development role.

The development team consists of the R&D associate as team leader with a full-time experienced author-programer as the assistant team leader. An experienced intern (phase 2) and one or more new interns (phase 1) together with at least one full-time clerk-typist complete the team. It is anticipated that a team should be able to work on at least two major development projects simultaneously, especially if one project is in the testing phase. If experience warrants, a second team may be established under the direction of a single R&D associate.

The research team consists of the R&D associate as the leader with at least one experienced intern (phase 4) and one or more new interns (phase 3) together with appropriate clerical help to complete the team. Interns assigned to research teams will for the most part have had previous experience as part of a development team.

Figure 1 indicates a position for a training distribution coordinator. This person will organize and direct the BYU annual media conference. In addition, he will organize and direct workshops with small groups of faculty members on the campus. The purpose of these workshops will be to provide training for faculty in the principles of instructional design and development. In addition, this person will serve as a diffusion specialist to insure as wide as possible a distribution of the findings of the research and papers describing development.

As courses are completed and available for testing and distribution beyond the BYU campus, this person will serve to coordinate this activity.

6. A Developed Training Package

The basic courses in our training program are currently being programed to provide examples of the type of development that we are attempting to train our students to perform. It is anticipated that as units of this training package are available, they will be distributed to other agencies who are involved in training instructional development specialists. Needless to say, these packages will be submitted to the same empirical validation that we anticipate with any course.

In addition, materials that are developed for use within the University, or by other agencies, by our faculty and staff as part of our program, will whenever possible be made available for commercial distribution, or where appropriate be placed in public domain for use by other institutions.

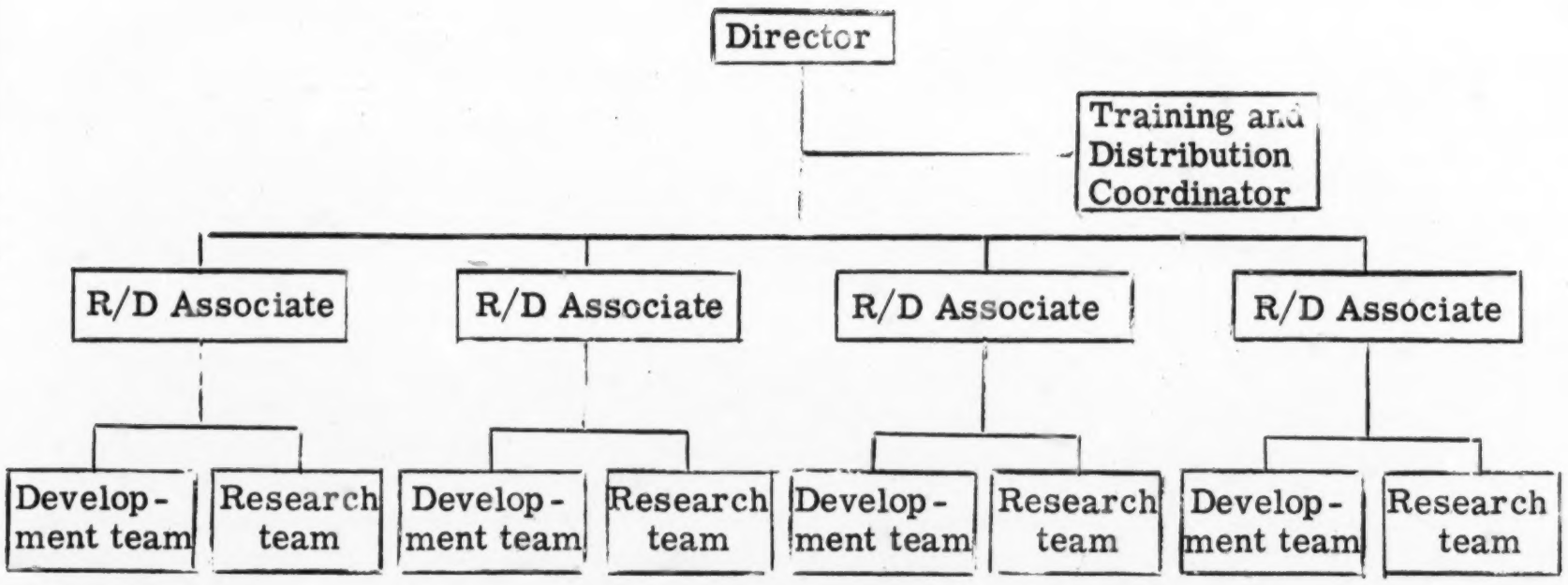

FIGURE 1. ORGANIZATIONAL STRUCTURE

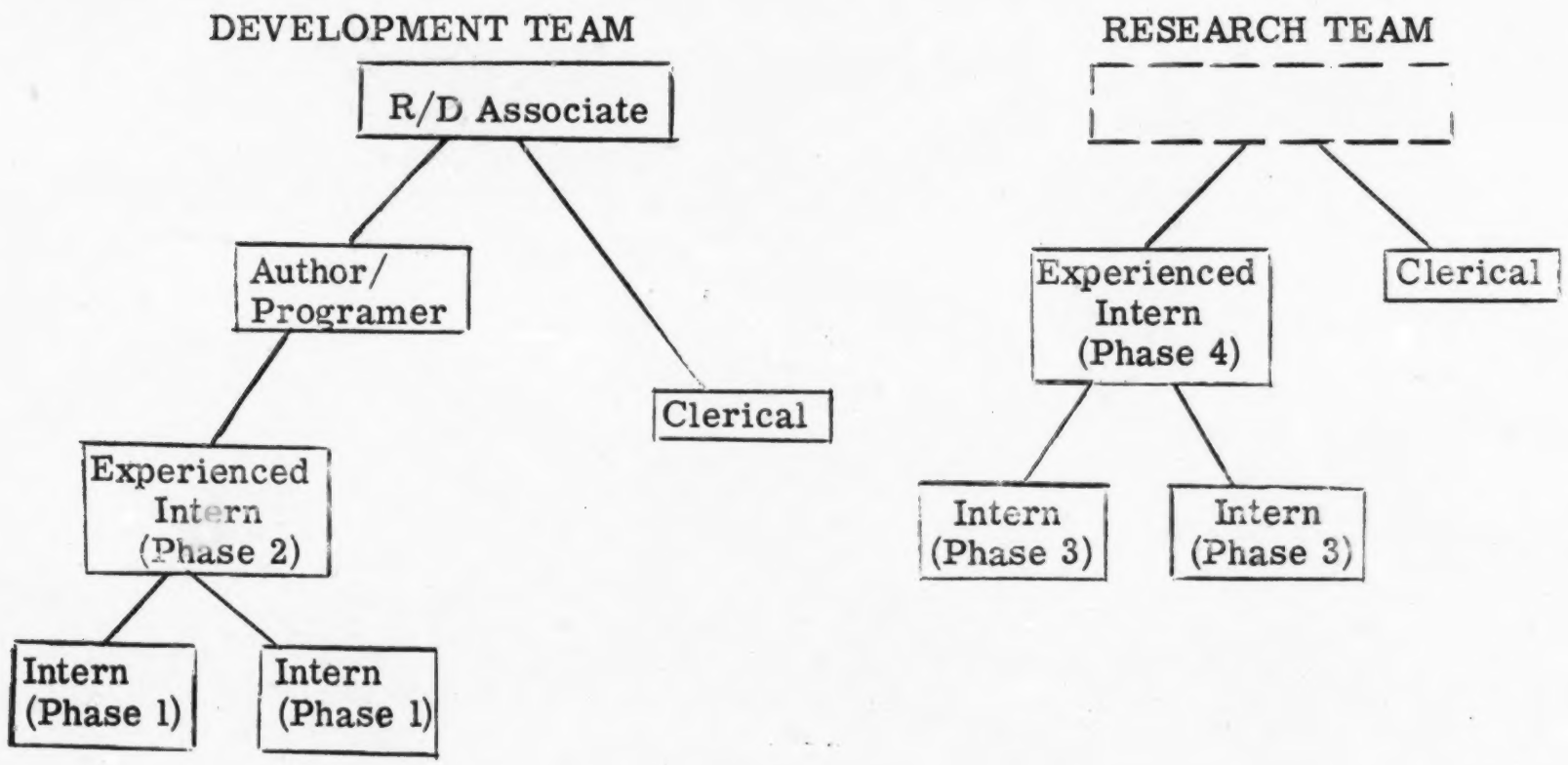

FIGURE 2. BASIC TEAM STRUCTURE